

Program

CRC WORKSHOP ON LIFE CYCLE ANALYSIS OF TRANSPORTATION FUELS

Argonne National Laboratory

Lemont, IL

October 15-17, 2019



WORKSHOP SPONSORS

API
Argonne National Laboratory
California Air Resources Board
Canadian Fuels Association
Concawe
Neste

National Biodiesel Board
Renewable Fuels Association
U.S. Department of Agriculture
U.S. Department of Energy - BETO
Union of Concerned Scientists
U.S. Environmental Protection Agency

WORKSHOP ORGANIZERS

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Ford Motor Company
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Union of Concerned Scientists
Natural Resources Canada
California Air Resources Board
U.S. Dept. of Agriculture
Concawe
RFA
National Biodiesel Board
Intl. Council on Clean Transport.
Marathon Petroleum
Argonne National Laboratory

The purpose of the workshop is for the free exchange of ideas, research, data etc. Sponsorship of or participation in the workshop by CRC and others does not reflect any endorsement of information presented at the workshop.

** Workshop Co-Chairs

* Presentations and times subject to change

Specific Workshop Goals

- Outline technical needs arising out of policy actions and ability of LCA analysis to meet those needs.
- Identify research results and activities that have come to light in the past two years that have helped to close data gaps previously outlined as outstanding issues.
- Identify data gaps, areas of uncertainties, validation/verification, model transparency, and data quality issues.
- Establish priorities for directed research to narrow knowledge gaps and gather experts' opinions on where scarce research dollars would best be spent.

Tuesday, October 15, 2019

Argonne House

5:00 - 6:00 PM

Registration - Argonne House Lobby

6:00 - 7:00 PM

Welcome Reception - Cocktails and Hors d'Oeuvres at Argonne House

Wednesday, October 16, 2019

Auditorium Building 402

7:00 - 8:00 AM

Registration

Continental Breakfast - Downstairs Café

8:00 AM

Welcome from Workshop Chairs:
Aaron Levy (US EPA), Robb De Kleine (Ford), and Jeongwoo Han (ExxonMobil)

Session 1

Transportation Fuel Policy

Chairpersons: Devin O'Grady, Jeremy Martin, Sari Kuusisto

8:10 AM

Canada's Clean Fuel Standard

Stephanie Searle

International Council on Clean Transportation

8:30 AM

Developments in the U.S. Renewable Fuel Standard Program

Aaron Levy

US Environmental Protection Agency

8:50 AM

EU RED II

Adrian O'Connell

Joint Research Centre

9:10 AM

LCFS updates

Anil Prabu

California Air Resources Board

9:30 AM

Panel Q&A

10:00 AM

BREAK - Downstairs Café

Session 2

Recent Modeling of Crop-Based Biofuels

Chairpersons: Stephanie Searle and Aaron Levy

10:20 AM

Life Cycle Energy and Greenhouse Gas Emission Effects of Biodiesel in the United States with Induced Land Use Change Impacts

Rui Chen

California Air Resources Board

10:40 AM

LCA Work for ICAO Alternative Fuels Task Force

Farzad Taheripour

Purdue University

11:00 AM

Induced Land Use Change Impacts of Biofuels: Insights from Latest GLOBIOM Modeling

Hugo Valin

International Institute for Applied Systems Analysis

11:20 AM

Panel Q&A

11:50 PM	LUNCH - Downstairs Café
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Session 3	Biofuels: “Compared to What?” Of Baselines, Reference Scenarios and Counterfactuals <i>Chairpersons: Keith Kine and Jeongwoo Han</i>
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1:00 PM	Estimating Displacement Emissions from By-Product, Waste, and Residue Biofuel Feedstocks	Nikita Pavlenko	International Council on Clean Transportation
1:20 PM	Developing Counterfactual and Comparison Scenarios to Evaluate the RFS	Tyler Lark	Wisconsin University
1:40 PM	The Need for a Standard for Reference Scenarios: The Development of a New ASTM Standard	Chuck Corr	Archer-Daniels Midland
2:00 PM	Data to Support Reference Scenarios: US Land Cover and Management (Historical & Baseline Projections)	Bill Hohenstein	US Department of Agriculture
2:20 PM	Panel Q&A		

2:50 PM	BREAK - Downstairs Café
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Special Panel	Exporing Key Issues in LUC Modeling <i>Chairpersons: Aaron Levy and Michael Wang</i>
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3:20 PM	State of LUC Models Applications in Regulations	Stephanie Searle	International Council on Clean Transportation
3:35 PM	Comparison of GTAP and GLOBIOM for ICAO CORSIA Simulations	Jim Hileman	Federal Aviation Administration
3:50 PM	Review of GTAP/CCLUB	Chris Malins	Cerology Inc.
4:05 PM	CRC Project RW-104: Stocks & Flows Models	Mike Griffin	Savant Consulting Inc.
4:20 PM	Panel Q&A		

5:00 PM	END OF DAY
6:00 PM	Reception in Argonne House
6:30 PM	Networking Dinner in Argonne House

Thursday, October 17, 2019			
Auditorium	Building 402		
7:30 AM	Registration <i>Continental Breakfast - Downstairs Café</i>		
8:20 AM	<i>Welcome from the Chairs</i>		
Session 4	Electrical Pathways <i>Chairpersons: Amit Kapur and Michael Wang</i>		
8:30 AM	Techno-Economic Assessment & Life Cycle Assessment Guidelines for CO2 Utilization	Volker Sick	University of Michigan
8:50 AM	Air Quality Implications of a High-Electrification Scenario in California	Marcus Alexander	Electric Power Research Institute
9:10 AM	Lifecycle Analysis of Low-Carbon Electro-Fuels	Amgad Elgowainy	Argonne National Laboratory
9:30 AM	Panel / Q&A		
9:50 AM	BREAK - Downstairs Café		
Session 5	Advanced/Novel/Waste Fuels <i>Chairpersons: Anil Prabu and Alicia Lindauer</i>		
10:10 AM	Sustainability Tradeoffs within Photoautotrophic Cultivation Systems: Integrating Physical and Lifecycle Modeling for Design and Optimization	Carlos Quiroz-Arita	Colorado State University
10:30 AM	Waste Carbon Pathways	Laurel Harmon	Lanzatech
10:50 AM	Multistage Torrefaction and in situ Catalytic Upgrading for Hydrocarbon Biofuels and Biochemicals: Life Cycle Energy and GHG Emissions Analysis	Vikas Khanna	University of Pittsburgh
11:10 AM	Panel / Q&A		
11:40 AM	LUNCH - Downstairs Café		

Session 6	Liquid Petroleum Fuels
<i>Chairpersons: Babak Fayyaz, Suren Rangaraju, and Robb DeKleine</i>	

1:00 PM	Refinery CO2 Allocation: Implications for Transport Policy	Amir Abdul Manan	Aramco Asia
1:20 PM	Global Carbon Intensity of Crude Oil Production	Adam Brandt	Stanford University
1:40 PM	Incorporating Sensitivity and Uncertainty into LCA of Transportation Fuels Derived from Various Crude Oils	Giovanni Di Lullo	University of Alberta
2:00 PM	Expanding the Inventory of the Petroleum Refinery Life Cycle Inventory Model (PRELIM)	Matt Jamison	National Energy Technology Laboratory

2:20 PM	Panel / Q&A
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2:50 PM	VOTING BREAK
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3:10 PM	Concluding Panel - Research Needs Discussion
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3:30 PM	End of Workshop, Closing Remarks from the Chairs
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